

Hawaiian Helminths 1. *Trigonocryptus*
conus n. gen., n. sp. (Trematoda: Fellodistomidae)¹

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THIS WORK was done at the Hawaii Marine Laboratory, University of Hawaii. Twenty-nine balloon fish, *Tetraodon hispidus* L., collected by trap, were examined for helminths. Four harbored in their intestine a total of eight trematodes which do not fit into any genus or species thus far described.

The worms were killed in cold Heidenhain fixative under light cover glass pressure, stained in celestine blue B, and mounted in H.S.R. Microscopic Mounting Medium.

All measurements are expressed in millimeters.

TRIGONOCRYPTUS n. gen.

GENERIC DIAGNOSIS: Fellodistomidae: Small conical trematodes with ventrolateral body folds separated posteriorly and converging anteriorly. Posterior end of body bears a short velum laterally and dorsally. Inverted tail cone present. Cuticula relatively thick, spined. Oral sucker subterminal with ventrolateral extensions. Ventral sucker large, transversely elongate and ridged, indented anteriorly and pos-

teriorly. Prepharynx and esophagus very short. Pharynx oval to spherical. Ceca short, saccular, not extending posterior to mid-body. Testes paired, opposed, oval, near posterior end of body. Cirrus sac oval to nearly spherical, immediately anterior to or slightly overlapped by acetabulum, encloses a weakly bipartite seminal vesicle, a well-developed prostate and a short cirrus. Ovary oval, median, partly between to a short distance anterior to testes. Seminal receptacle near, usually smaller than, ovary. Mehlis gland beside ovary, inconspicuous. Vitelline follicles in two major groups on each side of body extending from anterior acetabular to posterior oral sucker levels. Uterus mainly confined to posterior half of body, between and anterior to testes. Uterus and cirrus use common genital atrium which opens to outside medially and ventral to gut bifurcation. Eggs oval, numerous, operculated, with tiny knob at anopercular end. Excretory bladder U-shaped. Parasitic in the intestines of marine fish.

GENOTYPE: *Trigonocryptus conus*.

Trigonocryptus conus n. sp.

Figs. 1-5

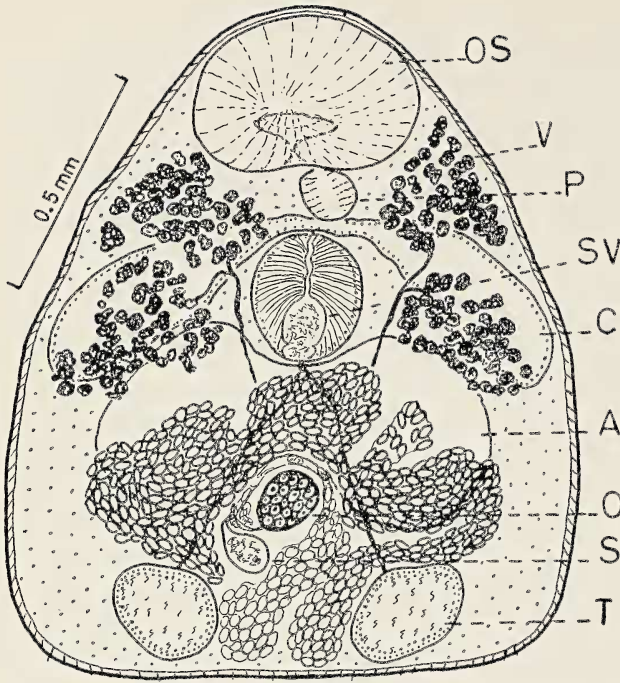
SPECIFIC DIAGNOSIS: With characters of genus. Body conical and pink in life, triangular when fixed under pressure. Cuticle 0.012-0.016 thick, armed with spines. Spines approximately 0.017 long with shouldered peripheral terminations (Fig. 4). Body 1.37-1.82, average 1.58 long and 0.98-1.4, average 1.24 wide. Oral sucker subterminal, muscular, with folds meeting those of the body wall, 0.39-0.55,

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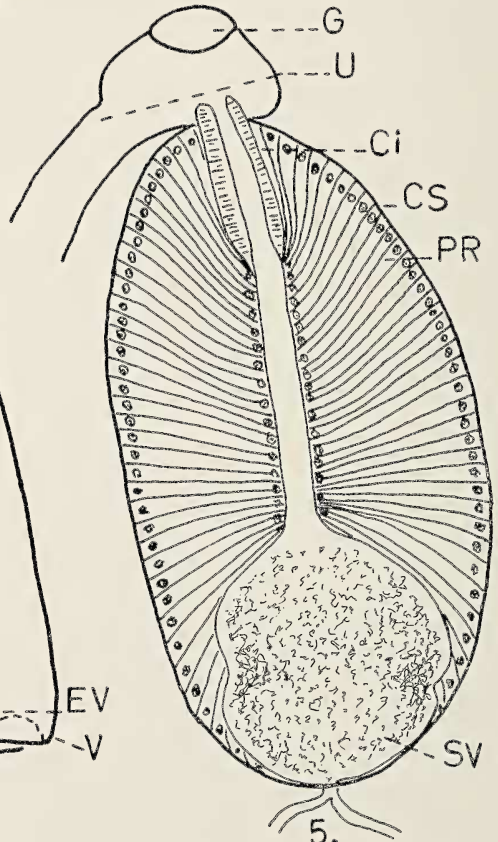
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average 0.44 anteroposteriorly and 0.41–0.55, average 0.48 transversely. Ventral sucker large, muscular, indented anteriorly and posteriorly, with two or three transverse ridges, 0.45–0.59, average 0.52 anteroposteriorly and 0.64–1.02, average 0.86 transversely. Prepharynx short, pharynx 0.093–0.112, average 0.10 anteroposteriorly and 0.081–0.121, average 0.11 transversely. Esophagus short, ceca thin walled, short, saccular, not extending beyond body equator. Testes near posterior end of body, opposed, oval, 0.17–0.28, average 0.22 long and 0.14–0.21, average 0.17 wide. Vasa efferentia join just before reaching cirrus sac. Cirrus sac median, immediately anterior to or partially overlapped by acetabulum, containing weakly bipartite seminal vesicle filled with sperm, a well-developed prostate, and a short cirrus which may project into the genital atrium. Genital pore median and ventral at level of gut bifurcation. Ovary median, usually a short distance anterior to testes, 0.096–0.17, average 0.15 long and 0.084–0.15, average 0.12 wide. Seminal receptacle pyriform, usually a short distance posterior and to the right of the ovary. Mehlis gland close to ovary, inconspicuous. Vitelline follicles in two major clusters on each side of body between anterior acetabular and oral sucker levels. Common vitelline duct not expanded to form reservoir. Uterus after leaving ovary passes posteriorly to loop between the testes then extends anteriorly to loop transversely and fill much of the acetabular region of the body. It then passes anteriorly to the genital atrium. The uterus of mature worms is filled with eggs. Newly formed eggs colorless, older eggs brown. Eggs 0.037–0.046, average 0.041 long and 0.022–0.025, average 0.023 wide, operculated, with a small knob at anopercular end. Excretory vesicle U-shaped, thin walled, with pore opening medially and subterminally.

TYPE SPECIMEN: *Trigonocryptus conus*, deposited as number 55285 in the U. S. National Museum, Helminth Collection.

HOST: *Tetraodon hispidus* L., balloon fish, in intestine.

LOCALITY: Kaneohe Bay, Oahu, Hawaii.

DISCUSSION

The genus *Trigonocryptus* most closely resembles *Paradiscogaster* Yamaguti, 1934. The major difference is in the vitellarian distribution, in one cluster on each side of the body confined to the cecal region in *Paradiscogaster*, and in two clusters on each side of the body extending from the acetabulum to the oral sucker in *Trigonocryptus*. Other differences are the ventrolateral extensions of the oral sucker in *Trigonocryptus* while this organ in *Paradiscogaster* has the usual circular outline; the unusual body shape in *Trigonocryptus* with a ventral, triangular depression, a velum on the lateral and dorsal margins of the posterior part of the body, and a truncated posterior end while the body shape is pyriform in *Paradiscogaster*. Yamaguti (1938) described a small tail cone in *Paradiscogaster chaetodontis*. *Trigonocryptus conus* has an inverted tail cone, dorsal to the excretory pore, which was never seen everted even in active worms. *Paradiscogaster piriformis* Yamaguti, 1934, was found in *Pleuronichthys cornatus* in Japan (Yamaguti, 1951); *P. chaetodontis* Yamaguti, 1938, in *Chaetodon collaris* in Japan and *C. strigangutus* and *C. trifasciatus* in Okinawa (Yamaguti, 1953); and *P. caranxi* (Strivastava, 1939) Yamaguti, 1953, in *Caranx kalla* in India. Although a goodly number of Hawaiian chaetodons and a few carangids have been examined, no species of *Paradiscogaster* or *Trigonocryptus* have been found in them. Hanson (1955) has reported a related form, *Discogasteroides ha-*

FIGS. 1–5. *Trigonocryptus conus*: 1, Dorsal view; 2, ventral view; 3, egg; 4, body spine; 5, terminal genitalia. A, Acetabulum; C, cecum; Ci, cirrus; CS, cirrus sac; EV, excretory vesicle; G, genital pore; O, ovary; OS, oral sucker; P, pharynx; PR, prostate; S, seminal receptacle; SV, seminal vesicle; T, testis; U, uterus; V, vitellaria; V, velum. All drawings made with the aid of a camera lucida.

waiensis, from a Hawaiian trunk fish, *Ostracion sebae* Bleeker.

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